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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,003	06/21/2005	Jerome Hazart	273626US2PCT	8044

22850 7590 02/09/2007  
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

NGUYEN, TU T

ART UNIT PAPER NUMBER

2886

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/540,003

Applicant(s)

HAZART, JEROME

Examiner

Tu T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 22-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/25/06, 09/15/05</u>   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Abstract***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The abstract of this application has more than 150 words.

### ***Specification***

The disclosure is objected to because of the following informalities:

In the "BRIEF DESCRIPTION OF THE DRAWINGS" section, "Figure 3A" Should be changed to "Figures 3A and 3B".

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 22-42 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

To meet the requirements of 35 U.S.C. §101, "(t)he claimed invention as a whole must accomplish a practical application. That is, it must produce **a useful, concrete and tangible result**." M.P.E.P. § 2106(II)(A) (quoting *State Street Bank & Trust v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373, 47 USPQ2d 1596, 1601 (Fed. Cir. 1998)).

Claims 22-42 appear to be an abstract idea rather than a practical application of the idea. Claims 22-42 do not result in a physical transformation nor does it appear to provide a useful, concrete and tangible result. Therefore, claims 22-42 appear non-statutory.

The claims are directed to a judicial exception; as such, pursuant to the Interim Guidelines on Patent Eligible Subject Matter (MPEP 2106)), the claims must have either physical transformation and/or a useful, concrete and tangible result. The claims fail to include transformation from one physical state to another. Although, the claims appear useful and concrete, there does not appear to be a tangible result claimed. Merely using mathematical techniques to manipulate the data to characterize a layer of material would not appear to be sufficient to constitute a tangible result, since the outcome of the steps 1-8 has not been used in a disclosed practical application nor made available in such a manner that its usefulness in a disclosed practical application can be realized. As such, the subject matter of the claims is not patent eligible.

Due to the "101 Rejection" discussed above, patentability of claims 22-42 could not be positively determined in this Office action. It appears that the cited references of record do not teach or render the obvious the steps of carrying out a set of reflectometry and/or ellipsometry measurements over the interval A, the set of measurements leading to a measured spectrum, and choosing methods for calculating associated with a nature of the measurements and with a type of layer to be characterized; choosing  $m$  initial values, belonging to the interval A,  $m$  being a whole number at least equal to 1, and defining an interval B, when  $m$  is greater than 1, and as being the interval A when  $m$  equals 1; choosing  $m$  complex initial values of a complex refraction index  $n^*=n+jk$  for the  $m$  points ranging from 1 to  $m$ ; when  $m$  is not 1, choosing an interpolation law that allows calculating the refraction index of the material over the interval B, from the points  $(\alpha_i, n_i)$  with  $n_i=n(\alpha_i)$ ,  $i$  range from 1 to  $m$ , and when  $m$  equals 1,  $n(\alpha)$  is taken equal to the number  $n_1(\alpha_1)$  over the entire interval B; choosing  $M$  variable parameters,  $M$  being less than or equal to  $2m+1$ ; choosing an error function that characterizes the difference between a measured spectrum and a theoretical spectrum; using a minimizing error function with  $M$  parameters, performing: a) by applying the interpolation law of  $(\alpha_1, n_1)$  over the interval B, deducing  $n(\alpha)$ ,  $\alpha$  belonging to B; b) by using  $n(\alpha)$  and the thickness of the layer, and methods for calculating spectrums, calculating a theoretical spectrum; c) comparing the measured and the calculated spectrum by using the error function and, if the error function is less than a predetermined value  $e$ , or is minimal, going to e), otherwise going to d); d) making the  $M$  variable parameters vary so as to tend to the minimum of the error

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function and returning to a); e) if the error function is less than  $e$ , then obtaining a set of  $M$  variable parameters, for which the error function is minimal and the refraction index is then taken equal to the last one obtained, and if the error function is greater or equal to  $e$  going to 8); 8) increasing the number  $m$  of initial values of the function  $\alpha$  and returning to 2), which structurally arranged and functionally operated as claimed in claims 22,32. However, it is unclear how the claims will be amended, the patentability of these claims will be determined in the next Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu T. Nguyen whose telephone number is (571) 272-2424. The examiner can normally be reached on T-F 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley Jr. can be reached on (571) 272-2800 Ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tu T. Nguyen  
Primary Examiner  
Art Unit 2877

02/03/2007